UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,558	06/22/2006	Mohamed Bouzekri	284875US0PCT	2097

22850 7590 09/19/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
VELASQUEZ, VANESSA T	
ART UNIT	**PAPER NUMBER**
1793	

NOTIFICATION DATE	DELIVERY MODE
09/19/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/565,558	BOUZEKRI ET AL.	
	Examiner	Art Unit	
	Vanessa Velasquez	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *1,2,6 and 9-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-5,7,8 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *Apr. 24, 2006; Oct. 19, 2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Traversal of Restriction

Applicant's election with traverse of Group III, claims 3-5, 7, 8, and 13, in the reply filed on August 4, 2008 is acknowledged. The traversal is on the grounds that the inventions are not patentably distinct and that there is no search burden on the Examiner. This is not found persuasive because distinctness and search burden are requirements for applications filed 35 U.S.C. 111(a) (MPEP § 801, 803 Section I). The instant application is a national stage entry application filed under 35 U.S.C. 371, wherein restriction is proper if lack of unity is demonstrated (PCT Rule 13.2).

The traversal is also on the grounds that the Examiner has not broken unity. The Examiner respectfully disagrees. The restriction mailed July 2, 2008 clearly identifies the technical feature and demonstrates that the technical feature does not define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art. Regarding the characteristics of the steel product, Guelton et al. (US 6,358,338) do teach a steel product that is recrystallized with grains having a size of 10 microns or less (col. 4, lines 60-61). The product of the tensile strength (MPa) multiplied by the elongation at fracture (%) is 72000 (1152 MPa x 62.5) (Table 1). Therefore, Guelton et al. do disclose the technical feature, and the claims lack unity. The requirement is still deemed proper and is therefore made FINAL.

Claims 1, 2, 6, 9, 11, and 12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable

generic or linking claim. Applicant timely traversed the restriction requirement in the reply filed on August 4, 2008.

Status of Claims

Claims 3-5, 7, 8, and 13 are presented for examination on the merits. Claims 1, 2, 6, 9, 11, and 12 are withdrawn as being drawn to non-elected inventions.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy of FR 03/08953 filed on July 22, 2003 has been received and placed in the file of record.

Information Disclosure Statement

Two (2) information disclosure statements (IDS) were received on April 24, 2006 and October 19, 2007. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Rejections - 35 USC § 112, Second Paragraph

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3-5 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the smelting." There is insufficient antecedent basis for this limitation in the claim. Claims 4, 5, and 13 are likewise rejected for being dependent therefrom.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3-5, 7, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guelton et al. (US 6,358,338) in view of Kim et al. (WO 93/13233), and further in view of Ferguson ("Design for Deformation Processes," Vol. 20, ASM Handbooks Online).

Regarding claims 3 and 13, Guelton et al. teach a process for making an iron-carbon-manganese steel strip. The method comprises casting a steel strip between rollers, hot-rolling the strip, and coiling the hot-rolled strip (col. 2, lines 18-24). The steel has a composition as follows, with the balance being iron and impurities originating from smelting (col. 1, lines 56-65):

Element	Claim 3	Element	US 6,358,338
C	0.5-0.7	C	0.001-1.6
Mn	17-24	Mn	6-30
Si	0-3	Si	0-2.5
Al	0-0.050	Al	0-6
S	0-0.030	S+Se+Te	0-0.5
P	0-0.080	P+Sn+Sb+As	0-0.2
N	0-0.1	N	0-0.3
	One or more of		
Cr	0-1	Cr	0-10
Mo	0-0.40	Mo+W	0-0.5
Ni	0-1	Ni	0-10
Cu	0-5	Cu	0-5
Ti	0-0.50	V+Ti+Nb+B+Zr+rare earths	0-3
Nb	0-0.50		
V	0-0.50		

Guelton et al. also teach that the coiling temperature is not strictly confined to a particular range (col. 4, lines 19-22) but warns that the temperature should not be so high to promote grain growth (col. 4, lines 22-27). Therefore, it would have been obvious to one of ordinary skill in the art to coil the steel strip at a temperature below 580°C to ensure that grains do not coarsen, which would decrease properties such as strength if allowed to occur.

Still regarding claims 3 and 13, Guelton et al. is silent as to the temperature of the slab during hot-rolling. Kim et al., also drawn to a process for producing a high-strength, austenitic, high manganese steel, teach that a preferred hot-rolling temperature is 1100-1250°C with a finish temperature ranging from 700°C to 1000°C (page 11, lines 8-11). The hot-rolling temperature is chosen to ensure uniform heating of the steel, and the finish temperature is chosen to ensure that productivity is not decreased (page 11, lines 12-17). Therefore, it would have been obvious to one of ordinary skill in the art to hot-roll the steel strip at the temperatures taught by Kim et al. in the process of Guelton et al. for the beneficial reasons stated above.

Still regarding claims 3 and 13, Guelton et al. in view of Kim et al. are silent as to the length of time between the hot-rolling and cooling operations. However, Ferguson teaches that the hold time (delay) after hot working and before a subsequent operation induces recrystallization and modifies grain size depending the duration of the hold (page 4, first full paragraph). Specifically, the grains become smaller, more refined during the hold time (page 4, first full paragraph). Thus, the hold time is a result-effective variable because varying the hold time produces grain of differing size, which

in turn varies the mechanical properties of the metal workpiece. It has been held that optimizing a result-effective variable involves only routine skill in the art (MPEP § 2144.05 II). In addition, it would have been obvious to one of ordinary skill in the art to vary the hold time in order to obtain a product with a specific grain structure and having a particular set of desired properties.

Regarding claim 4, Guelton et al. teach casting the steel composition between rollers to form a strip (col. 2, lines 18-24). Guelton et al. are silent as to the material of the rollers. However, it would have been obvious to one of ordinary skill in the art to utilize rollers composed of steel because of its excellent mechanical properties. There would also be a smaller chance of contaminating the liquid steel as it is passed between rollers because the apparatus parts are made of like material.

Regarding claim 5, Guelton et al. teach that the steel strip may be subjected to an additional deformation process such as a skin-pass operation. The degree to which the strip is deformed will depend on the shape and dimensions desired in the end product.

Regarding claim 7, Guelton et al. teach a process for making an iron-carbon-manganese steel strip. The method comprises casting a steel strip between rollers, hot-rolling the strip, and coiling the hot-rolled strip (col. 2, lines 18-24). The steel has a composition as follows, with the balance being iron and impurities originating from smelting (col. 1, lines 56-65):

Element	Claim 3	Element	US 6,358,338
C	0.5-0.7	C	0.001-1.6
Mn	17-24	Mn	6-30
Si	0-3	Si	0-2.5

Al	0-0.050	Al	0-6
S	0-0.030	S+Se+Te	0-0.5
P	0-0.080	P+Sn+Sb+As	0-0.2
N	0-0.1	N	0-0.3
	One or more of		
Cr	0-1	Cr	0-10
Mo	0-0.40	Mo+W	0-0.5
Ni	0-1	Ni	0-10
Cu	0-5	Cu	0-5
Ti	0-0.50	V+Ti+Nb+B+Zr+rare earths	0-3
Nb	0-0.50		
V	0-0.50		

Guelton et al. also teach that the coiling temperature is not strictly confined to a particular range (col. 4, lines 19-22) but warns that the temperature should not be so high to promote grain growth (col. 4, lines 22-27). Therefore, it would have been obvious to one of ordinary skill in the art to coil the steel strip at a temperature below 580°C to ensure that grains do not coarsen, which would decrease properties such as strength if allowed to occur. Guelton et al. further teach that after hot-rolling, the strip may be cold-rolled and annealed to produce an austenitic steel having grains less than 10 microns in size (col. 4, lines 15, 31-45). Annealing may occur at 800-850°C for 60 seconds to 120 seconds (col. 4, lines 55-57). Cooling rates can be as fast as 100-6000°C/s (col. 4, lines 49-54).

Still regarding claim 7, Guelton et al. is silent as to the temperature of the slab during hot-rolling. Kim et al., also drawn to a process for producing a high-strength, austenitic, high manganese steel, teach that a preferred hot-rolling temperature is 1100-1250°C with a finish temperature ranging from 700°C to 1000°C (page 11, lines 8-11). The hot-rolling temperature is chosen to ensure uniform heating of the steel, and the finish temperature is chosen to ensure that productivity is not decreased (page 11, lines

12-17). Therefore, it would have been obvious to one of ordinary skill in the art to hot-roll the steel strip at the temperatures taught by Kim et al. in the process of Guelton et al. for the beneficial reasons stated above.

Still regarding claim 7, Guelton et al. in view of Kim et al. are silent as to the length of time between the hot-rolling and cooling operations. However, Ferguson teaches that the hold time (delay) after hot working and before a subsequent operation induces recrystallization and modifies grain size depending the duration of the hold (page 4, first full paragraph). Specifically, the grains become smaller, more refined during the hold time (page 4, first full paragraph). Thus, the hold time is a result-effective variable because varying the hold time produces grain of differing size, which in turn varies the mechanical properties of the metal workpiece. It has been held that optimizing a result-effective variable involves only routine skill in the art (MPEP § 2144.05 II). In addition, it would have been obvious to one of ordinary skill in the art to vary the hold time in order to obtain a product with a specific grain structure and having a particular set of desired properties.

Regarding claim 8, Guelton et al. teach that the steel strip may be subjected to an additional deformation process such as a skin-pass operation. The degree to which the strip is deformed will depend on the shape and dimensions desired in the end product.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is (571)270-3587. The examiner can normally be reached on Monday-Friday 8:30 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/Vanessa Velasquez/
Examiner, Art Unit 1793